IN THE CLAIMS

Claims 1-30, 35 and 40 are cancelled, without prejudice to re-entry thereof in the present application or a continuing application.

Claims 31, 32 and 38 are amended.

Claims 41-54 are newly added.

1-30. (cancelled)

31. (currently amended) A method for making a transformed plant, comprising:

providing a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a plant GAD enzyme;

transforming one or more plants with the vector to provide one or more transformed plants that express the polynucleotide; and

selecting a transformed plant that ~~(i) exhibits a GABA concentration in non-stress conditions of up to 0.28 mill~~igrams GABA per gram dry weight of the plant; ~~or (ii)~~ does not exhibit significant loss of ~~growth characteristics, yield,~~ reproductive function ~~or other morphological or agronomic characteristic compared to a non-transformed plant;~~

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain.

32. (currently amended) The method according to claim 31, wherein the GAD enzyme comprises an amino acid sequence having at least ~~60%~~ 70% identity to ~~a sequence selected from the group consisting of~~ the sequence set forth in SEQ ID NO: 2~~; the sequence set forth in SEQ ID NO: 4; the sequence set forth in SEQ ID NO: 6; the sequence set forth in SEQ ID NO: 8; the sequence set forth in SEQ ID NO: 10; the sequence set forth in SEQ ID NO: 12; the sequence set forth in SEQ ID NO: 14; the sequence set forth in SEQ ID NO: 16; and the sequence set forth in SEQ ID NO: 18~~ and wherein the GAD enzyme is effective to catalyze a reaction of glutamic acid to GABA.

33. (cancelled)

34. (previously presented) The method according to claim 31, wherein the transformed plant produces GAD enzymes at a rate greater than the rate at which GAD enzymes are produced by a non-transformed plant of the same species under the same conditions.

35. (cancelled)

36. (original) The method of Claim 31, wherein said transforming comprises:

(i) transforming a cell, tissue or organ from a host plant with the DNA construct;

(ii) selecting a transformed cell, cell callus, somatic embryo, or seed which contains the DNA construct;

(iii) regenerating a whole plant from the selected transformed cell, cell callus, somatic embryo, or seed; and

(iv) selecting a regenerated whole plant that expresses the polynucleotide.

37. (previously presented) A transformed plant obtained according to the method of claim 31 or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide.

38. (currently amended) A plant transformed with a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a GAD enzyme, or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide;

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain;

wherein the plant expresses the polynucleotide; and

wherein the plant ~~(i) exhibits a GABA concentration in non-stress conditions of up to 0.28 milligrams GABA per gram dry weight of the plant; or (ii)~~ does not exhibit significant loss

of ~~growth characteristics, yield,~~ reproductive function ~~or other morphological or agronomic characteristic compared to a non-transformed plant~~.

39. (original) The plant according to claim 38, the plant being selected from the group consisting of duckweed, rice, wheat, barley, rye, corn, Bermuda grass, Blue grass, fescue, rapeseed, potato, carrot, sweet potato, bean, pea, chicory, lettuce, cabbage, cauliflower, broccoli, turnip, radish, spinach, asparagus, onion, garlic, eggplant, pepper, celery, squash, pumpkin, zucchini, cucumber, apple, pear, quince, melon, plum, cherry, peach, nectarine, apricot, strawberry, grape, raspberry, blackberry, pineapple, avocado, papaya, mango, banana, soybean, bush beans, tobacco, tomato, green pepper, sorghum and sugarcane.

40. (cancelled)

41. (new) A method for making a transformed plant, comprising:

providing a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a plant GAD enzyme;

transforming one or more plants with the vector to provide one or more transformed plants that express the polynucleotide; and

selecting a transformed plant that does not exhibit significant loss of yield compared to a non-transformed plant;

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain.

42. (new) The method according to claim 41, wherein the GAD enzyme comprises an amino acid sequence having at least 70% identity to the sequence set forth in SEQ ID NO: 2 and wherein the GAD enzyme is effective to catalyze a reaction of glutamic acid to GABA.

43. (new) The method according to claim 41, wherein the transformed plant produces GAD enzymes at a rate greater than the rate at which GAD enzymes are produced by a non-transformed plant of the same species under the same conditions.

44. (new) The method of Claim 41, wherein said transforming comprises:

(i) transforming a cell, tissue or organ from a host plant with the DNA construct;

(ii) selecting a transformed cell, cell callus, somatic embryo, or seed which contains the DNA construct;

(iii) regenerating a whole plant from the selected transformed cell, cell callus, somatic embryo, or seed; and

(iv) selecting a regenerated whole plant that expresses the polynucleotide.

45. (new) A transformed plant obtained according to the method of claim 41 or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide.

46. (new) A plant transformed with a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a GAD enzyme, or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide;

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain;

wherein the plant expresses the polynucleotide; and

wherein the plant does not exhibit significant loss of yield compared to a non-transformed plant.

47. (new) The plant according to claim 46, the plant being selected from the group consisting of duckweed, rice, wheat, barley, rye, corn, Bermuda grass, Blue grass, fescue, rapeseed, potato, carrot, sweet potato, bean, pea, chicory, lettuce, cabbage, cauliflower, broccoli, turnip, radish, spinach, asparagus, onion, garlic, eggplant, pepper, celery, squash, pumpkin, zucchini, cucumber, apple, pear, quince, melon, plum, cherry, peach, nectarine, apricot,

strawberry, grape, raspberry, blackberry, pineapple, avocado, papaya, mango, banana, soybean, bush beans, tobacco, tomato, green pepper, sorghum and sugarcane.

48. (new) A method for making a transformed plant, comprising:

providing a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a plant GAD enzyme;

transforming one or more plants with the vector to provide one or more transformed plants that express the polynucleotide; and

selecting a transformed plant that is not significantly stunted compared to a non-transformed plant;

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain.

49. (new) The method according to claim 48, wherein the GAD enzyme comprises an amino acid sequence having at least 70% identity to the sequence set forth in SEQ ID NO: 2 and wherein the GAD enzyme is effective to catalyze a reaction of glutamic acid to GABA.

50. (new) The method according to claim 48, wherein the transformed plant produces GAD enzymes at a rate greater than the rate at which GAD enzymes are produced by a non-transformed plant of the same species under the same conditions.

51. (new) The method of Claim 48, wherein said transforming comprises:

(i) transforming a cell, tissue or organ from a host plant with the DNA construct;

(ii) selecting a transformed cell, cell callus, somatic embryo, or seed which contains the DNA construct;

(iii) regenerating a whole plant from the selected transformed cell, cell callus, somatic embryo, or seed; and

(iv) selecting a regenerated whole plant that expresses the polynucleotide.

52. (new) A transformed plant obtained according to the method of claim 48 or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide.

53. (new) A plant transformed with a vector comprising a constitutive promoter operably linked to a polynucleotide that encodes a GAD enzyme, or progeny thereof that comprises the constitutive promoter operably linked to the polynucleotide;

wherein the GAD enzyme does not include a functional autoinhibitory calmodulin-binding domain;

wherein the plant expresses the polynucleotide; and

wherein the plant is not significantly stunted compared to a non-transformed plant.

54. (new) The plant according to claim 53, the plant being selected from the group consisting of duckweed, rice, wheat, barley, rye, corn, Bermuda grass, Blue grass, fescue, rapeseed, potato, carrot, sweet potato, bean, pea, chicory, lettuce, cabbage, cauliflower, broccoli, turnip, radish, spinach, asparagus, onion, garlic, eggplant, pepper, celery, squash, pumpkin, zucchini, cucumber, apple, pear, quince, melon, plum, cherry, peach, nectarine, apricot, strawberry, grape, raspberry, blackberry, pineapple, avocado, papaya, mango, banana, soybean, bush beans, tobacco, tomato, green pepper, sorghum and sugarcane.